

Notice of Allowability	Application No.	Applicant(s)	
	10/674,977	BROWN ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER P. GREY	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 2/2/10.
2. ☒ The allowed claim(s) is/are 1-3,17-28 and 33-36.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

/Frank Duong/
 Primary Examiner, Art Unit 2474

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Charles Richardson on February 12, 2010.

The application has been amended as follows:

Regarding claim 1,

1. (Currently Amended) An apparatus for bandwidth management over a multiplexed communication path, comprising:

a plurality of load shapers configured to:

maintain a local bandwidth management table comprising a local token count for each of a plurality of classes of source entities, wherein said classes of source entities are classes of application programs seeking access to the multiplexed communication path;

receive a data packet from a source entity;

determine that the source entity belongs to a class that is one of the plurality of classes;

check the local token count for availability of tokens for said class of the source entity;

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transmit the data packet over the multiplexed communication path if the local token count for the class of the source entity is at least one; ~~and~~

decrement the local token count for the class of the source entity in the local bandwidth management table in response to the transmission; and

a Bandwidth Management Controller configured to:

maintain a centralized bandwidth management table comprising a base token count for each of the plurality of classes of source entities, wherein a minimum bandwidth is reserved for each of the plurality of classes of source entities and the base token count increases at a rate corresponding to the minimum bandwidth; and wherein:

the plurality of load shapers is further configured to request a token for the class of the source entity from the Bandwidth Management Controller in response to the transmission; and

the Bandwidth Management Controller is further configured to respond to the request if the base token count for the class of the source entity is at least one by:

providing a token and decrementing the base token count for the class of the source entity.

Regarding claim 24,

24. (Currently Amended) A computer program ~~product~~ for bandwidth management over a multiplexed communication path, the computer program ~~product~~ embodied on a tangible computer readable ~~medium~~ storage device comprising:

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computer code for maintaining a centralized bandwidth management table comprising a base token count for each of a plurality of classes of source entities, said classes of source entities being classes of application programs seeking access to the multiplexed communication path, wherein a minimum bandwidth is reserved for each of the plurality of classes of source entities and the base token count increases at a rate corresponding to the minimum bandwidth;

computer code for maintaining a local bandwidth management table comprising a local token count for each of the plurality of classes of source entities;

computer code for receiving a data packet from a source entity;

computer code for determining that the source entity belongs to a class that is one of the plurality of classes;

computer code for checking the local token count for availability of tokens for said class of the source entity;

computer code for transmitting the data packet over the multiplexed communication path if the local token count for the class of the source entity is at least one;

computer code for decrementing the local token count for the class of the source entity in the local bandwidth management table in response to the transmission;

computer code for requesting a token for the local token count for the class of the source entity in response to the transmission; and

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computer code for, if the base token count for the class of the source entity is at least one, providing the requested token and decrementing the base token count for the class of the source entity.

Regarding claim 25,

25. (Currently Amended) The computer program ~~product~~ of claim 24, wherein:
the centralized bandwidth management table further comprises a standby token count for each of the plurality of classes of source entities;

and further comprising:

computer code for, if the base token count for the class of the source entity is zero and the standby token count for the class of the source entity is at least one, providing the requested token and decrementing the standby token count for the class of the source entity.

Regarding claim 26,

26. (Currently Amended) The ~~method~~ computer program of claim 25, further comprising:

computer code for linearly increasing the standby token count for each of the plurality of classes of source entities when the communication path is not congested;
and

computer code for exponentially decreasing the standby token count for each of the plurality of source entities when the communication path is congested.

Regarding claim 27,

27. (Currently Amended) The ~~method~~ computer program of claim 24, wherein the local token count for each of the plurality of classes of source entities has a maximum count of two tokens.

Regarding claim 28,

28. (Currently Amended) The ~~method~~ computer program of claim 24, further comprising maintaining a count of outstanding requests for tokens.

Allowable Subject Matter

2. Claims 1-3, 17-28 and 33-36 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER P. GREY whose telephone number is (571)272-3160. The examiner can normally be reached on 10AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Moe Aung can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frank Duong/
Primary Examiner, Art Unit 2474

Christopher P Grey
Examiner
Art Unit 2474